



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/657,554

09/04/2003

Lewis B. Aronson

9775-0197-999

3332

24341

7590

11/03/2004

MORGAN, LEWIS & BOCKIUS, LLP.
2 PALO ALTO SQUARE
3000 EL CAMINO REAL
PALO ALTO, CA 94306

EXAMINER

LEUNG, CHRISTINA Y

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/657,554	Applicant(s) ARONSON ET AL.	
	Examiner Christina Y. Leung	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2003.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-13 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 04 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09-04-03, 02-11-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites "the predefined memory mapped locations" in line 10 of the claim and "the memory" in line 14 of the claim. There is insufficient antecedent basis for these limitations in the claims since the claim does not previously recite memory mapped locations or a memory.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al. (US 5,812,572 A) in view of Stephenson (US 2002/0027688 A1) and Swartz (US 6,021,947 A).

Regarding claim 1, King et al. disclose a circuit for controlling an optoelectronic device having a laser transmitter 36 (Figure 1) comprising:

memory (the PROM, RAM, and EEPROM elements in microcontroller 50), including one or more memory arrays for storing information related to the device;

analog to digital conversion circuitry 52 for receiving at least one analog signal, the at least one analog signal corresponding to operating conditions of the optoelectronic transceiver, converting the at least one analog signal into at least one digital value, and storing the at least one digital value in the memory (column 7, lines 40-45; column 13, lines 49-67; column 14, lines 1-9); and

an interface 26 configured to enable a host (such as computer 90 in Figure 3) to read from and write to host-specified locations within the memory (column 10, lines 10-18; column 16, lines 58-63);

comparison logic (logic circuitry in microcontroller 50) configured to compare the at least one digital value with a limit value to generate a flag value (i.e., an “alarm”; column 16, lines 24-33); and

operation disable circuitry configured to disable operation of the optoelectronic device in response to a signal, wherein the signal is based on the flag value (column 16, lines 36-38).

King et al. do not explicitly label a part of their circuit as “operation disable circuitry,” but they clearly disclose circuitry that controls the optoelectronic device (such as modulation control adjust 24 and bias control 30) and also disclose that the system may disable the device. It would be well understood in the art that King et al. inherently disclose that the circuitry for controlling the device is configured to disable the device if desired.

Although King et al. also disclose a photodiode receiver 40, the receiver 40 receives a signal fed back from the transmitter; they do not specifically disclose a photodiode receiver together with the disclosed laser transmitter in a “transceiver” context (wherein the receiver would receive signals sent from an opposing communication device).

However, bidirectional optical communication using a transmitter and a receiver at both ends is well known in the art. Stephenson in particular teaches an optical communications system (Figures 2-4), including a laser transmitter 110 such as already disclosed by King et al., and further including a photodiode receiver 134 associated with that transmitter to provide a transceiver. It would have been obvious to a person of ordinary skill in the art to further include a receiver as taught by Stephenson in the system disclosed by King et al. in order to enable bidirectional communications between two locations.

King et al. do not specifically disclose that the circuit is a single-chip integrated circuit. However, it is well known in the art that a circuit containing components such as memory or analog to digital conversion circuitry may be integrated onto a single chip, as Swartz in particular teaches (column 11, lines 3-22). It would have been obvious to a person of ordinary skill in the art to integrate the controller components disclosed by King et al. onto a single chip as taught by Swartz (in the system described by King et al. in view of Stephenson) in order to manufacture the controlling circuit efficiently and compactly.

Regarding claims 2 and 5, King et al. in view of Stephenson and Swartz et al. describe systems as discussed above with regard to claims 1 and 4 respectively including an optoelectronic transceiver. King et al. also discloses operation disable circuitry as discussed above, but does not specifically disclose sending a signal to a disable pin. However, Stephenson further teaches that an optoelectronic transceiver may include a disable pin 115 (Figure 4).

As discussed above with regard to claims 1 and 4, King et al. already inherently disclose that the circuitry for controlling the device is configured to disable the device if desired. It would have been obvious to a person of ordinary skill in the art to further include a disable pin as taught

by Stephenson in the system described by King et al. in view of Stephenson and Swartz in order to provide a way to clearly cut off the transceiver and prevent the various feedback loops in the system from activating or controlling the transceiver in response to the loss of output (Stephenson, page 6, paragraph [0045]).

Regarding claims 3 and 6, which depend on claims 1 and 4 respectively, King et al. disclose that the limit value is dependent on a temperature of the optoelectronic device (column 16, lines 27-31).

Regarding claim 7, King et al. disclose a temperature look up table used in generating control signals based on a temperature of the optoelectronic transceiver (column 13, lines 60-62; column 14, lines 1-10).

Regarding claim 8, King et al. disclose a circuit for controlling an optoelectronic device having a laser transmitter 36 (Figure 1), comprising:

memory (the PROM, RAM, and EEPROM elements in microcontroller 50), including one or more memory arrays for storing information related to the transceiver;

analog to digital conversion circuitry 52 for receiving at least one analog signal, the at least one analog signal corresponding to operating conditions of the optoelectronic transceiver, converting the at least one analog signal into at least one digital value, and storing the at least one digital value in the memory (column 13, lines 49-67; column 14, lines 1-9);

control circuitry (modulation control adjust 24 and bias control 30) configured to generate control signals to control operation of the laser transmitter in accordance with one or more values stored in the memory (column 16, lines 26-31);

an interface (serial port 26) for allowing a host (such as computer 90 in Figure 3) to read from and write to host specified locations within the memory; and

wherein the control circuitry includes circuitry configured to adjust one or more control signals in accordance with an adjustment value stored in the memory by the host via said interface (column 13, lines 58-64; column 16, lines 26-31).

Again, although King et al. also disclose a photodiode receiver 40, the receiver 40 receives a signal fed back from the transmitter; they do not specifically disclose a photodiode receiver together with the disclosed laser transmitter in a “transceiver” context (wherein the receiver would receive signals sent from an opposing communication device).

However, bidirectional optical communication using a transmitter and a receiver at both ends is well known in the art. Stephenson in particular teaches an optical communications system (Figures 2-4), including a laser transmitter 110 such as already disclosed by King et al., and further including a photodiode receiver 134 associated with that transmitter to provide a transceiver. It would have been obvious to a person of ordinary skill in the art to further include a receiver as taught by Stephenson in the system disclosed by King et al. in order to enable bidirectional communications between two locations.

Again, King et al. do not specifically disclose that the circuit is a single-chip integrated circuit. However, it is well known in the art that a circuit containing components such as memory or analog to digital conversion circuitry may be integrated onto a single chip, as Swartz in particular teaches (column 11, lines 3-22). It would have been obvious to a person of ordinary skill in the art to integrate the controller components disclosed by King et al. onto a single chip

as taught by Swartz (in the system described by King et al. in view of Stephenson) in order to manufacture the controlling circuit efficiently and compactly.

Regarding claim 9, King et al. disclose that the adjustment value corresponds to a deviation from a configured operating condition of the optoelectronic transceiver, since the control signals disclosed by King et al. are adjusted based on deviations in operating conditions (such as temperature or power; column 16, lines 26-31).

Regarding claim 10, King et al. disclose that the control circuitry is configured to adjust the one or more control signals by scaling the control signals in one embodiment of their system. King et al. disclose that the stored adjustment values may be in the form of polynomial coefficients for scaling and calculating the control signals in real time (column 13, lines 60-64; column 16, lines 26-31).

Regarding claim 11, King et al. disclose that the control circuitry may be configured to adjust the one or more control signals by an amount specified by the adjustment value in another embodiment of their invention. King et al. discloses that the control circuitry may adjust control signals using specified discrete adjustment amounts (column 13, lines 60-62; column 14, lines 1-10; column 16, lines 26-31).

Regarding claim 12, as well as it may be understood with regard to 35 U.S.C. 112 as discussed above, King et al. disclose a method of controlling an optoelectronic device having a laser transmitter 36 (Figure 1), comprising:

in accordance with instructions received from a host device (such as computer 90 shown in Figure 3), enabling (via serial port 26) the host device to read from and write to host specified

Art Unit: 2633

locations within a controller (i.e., microcontroller 50, which includes memory elements) of the optoelectronic device;

receiving a plurality of analog signals from the laser transmitter 36, converting the received analog signals into digital values (using analog-to-digital converter 52), and storing the digital values in the controller 50; and

generating control signals (such as signals to modulation control adjust element 24 and bias control 30) to control operation of the laser transmitter in accordance with one or more values stored within the controller; and

testing operation of the device at a known deviation from a configured operating condition of the optoelectronic transceiver by adjusting one or more control signals in accordance with an adjustment value stored in the memory. King et al. disclose testing the device at selected temperatures by performing steps including adjusting a control signal for the transmitter (such as a modulation current signal) in accordance with a stored incremental adjustment value (Figure 6; column 11, lines 21-23 and lines 37-60). Also, King et al. disclose that during operation of the transceiver, control signals are adjusted according to known deviations from a configured operating condition using adjustment values that are stored either as discrete values or polynomial coefficients (column 13, lines 60-64; column 16, lines 26-31).

Again, although King et al. also disclose a photodiode receiver 40, the receiver 40 receives a signal fed back from the transmitter; they do not specifically disclose a photodiode receiver together with the disclosed laser transmitter in a “transceiver” context (wherein the receiver would receive signals sent from an opposing communication device).

However, bidirectional optical communication using a transmitter and a receiver at both ends is well known in the art. Stephenson in particular teaches an optical communications system (Figures 2-4), including a laser transmitter 110 such as already disclosed by King et al., and further including a photodiode receiver 134 associated with that transmitter to provide a transceiver. It would have been obvious to a person of ordinary skill in the art to further include a receiver as taught by Stephenson in the system disclosed by King et al. in order to enable bidirectional communications between two locations.

Regarding claim 13, King et al. disclose that the adjusting includes scaling the control signals by the adjustment value (King et al. disclose that the adjustment values may be polynomial coefficients that are used to scale and calculate the control signals; column 13, lines 60-64).

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. The following rejections in this section of the Office Action are provisional obviousness-type double patenting rejections because the conflicting claims have not in fact been patented.

7. Examiner notes that two different applications other than the present application are referred to below: 09/777,917 and 10/713,685.

8. Claims 1, 4, and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/777,917 in view of King et al.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 4 generally recite the same elements of the apparatus recited in claim 1 of '917, including a transmitter, a receiver, and a circuit including memory, analog to digital conversion circuitry, comparison logic for generating flag values, and an interface for allowing a host to read from locations in memory. Claim 4 also recites general control circuitry for generating control signals as similarly recited in claim 1 of '917.

Claims 1 and 4 differ from claim 1 of '917 in that they further recite operation disable circuitry to disable operation of the transceiver in response to a control signal based on a flag value. However, King et al. teach circuitry configured to disable operation of an optoelectronic device in response to the result of a comparison between an input signal and a limit value

Art Unit: 2633

(column 16, lines 36-38). It would have been obvious to a person of ordinary skill in the art to provide the apparatus of claims 1 and 4 of the present application given claim 1 of '917 in view of King et al. in order to specifically allow the optoelectronic transceiver to be disabled if necessary, since claim 1 of '917 is already directed to monitoring an optoelectronic device and providing appropriate control and actions for the device based on the monitoring. Therefore, claims 1 and 4 of the application are rejected under obvious-type double patenting over claim 1 of '917 in view of King et al.

Claim 7 of the application, which depends on claim 4, recites a temperature look up table, which claim 1 of '917 lacks. However, King et al. further teach a temperature look up table used in generating control signals (column 13, lines 60-67; column 14, lines 1-10). It would have been obvious to a person of ordinary skill in the art to further include a temperature look-up table as taught by King et al. to system suggested by claim 1 of '917 in order to allow the system to respond to changes caused by the temperature of the optical device. Claim 7 of the application is therefore rejected under obvious-type double patenting over claim 1 of '917 in view of King et al.

9. Claims 2 and 5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/777,917 in view of King et al. and Stephenson.

Claims 2 and 5 of the application, which depend on claims 1 and 4 respectively, further recite that the disable circuitry disables the transceiver in response to a signal sent to a disable pin in the transceiver, a limitation which the apparatus described by claim 1 of '917 in view of

King et al. lacks. However, Stephenson teaches a disable pin 115 in an optical transceiver (Figure 4).

As discussed above with regard to claims 1 and 4, the apparatus suggested by claim 1 of '917 in view of King et al. already includes operation disable circuitry. It would have been obvious to a person of ordinary skill in the art to further include a disable pin as taught by Stephenson in the system suggested by claim 1 of '917 in view of King et al. in order to provide a way to clearly cut off the transceiver and prevent the various feedback loops in the system from activating or controlling the transceiver in response to the loss of output (Stephenson, page 6, paragraph [0045]). Therefore, claims 2 and 5 of the application are rejected under obvious-type double patenting over claim 1 of '917 in view of King et al. and Stephenson.

10. Claims 3 and 6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 9 of copending Application No. 09/777,917 in view of King et al.

Claims 3 and 6 of the application, which depend on claims 1 and 4 respectively, further recite that the limit value is based on a temperature of the transceiver, a limitation that is similarly included in the limitations recited in claim 9 of '917, which depends indirectly on claim 1 of that application. Claims 3 and 6 of the application are therefore rejected under obvious-type double patenting over claim 9 of '917 in view of King et al. for the reasons given above for the parent claims 1 and 4.

11. Claims 8 and 9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 8 of the application generally recites elements as similarly recited in claim 11 of '917 (which depends on claim 1 of that application), including a single-chip integrated circuit for controlling an optoelectronic transceiver including memory, analog to digital conversion circuitry, control circuitry for generating control signals, a host interface, and circuitry configured to adjust a control signal in accordance with an adjustment value stored in the memory.

Claim 8 lacks comparison logic as recited in claim 11 of '917. However, given the apparatus recited in claim 11 of '917, it would have been obvious to a person of ordinary skill in the art to provide the apparatus recited in claim 8 of the application by leaving out the comparison logic. Therefore, claim 8 is rejected under obvious-type double patenting over claim 11 of '917.

Claim 9 of the application, which depends on claim 8, further recites that the adjustment value corresponds to a deviation from a configured operation condition of the transceiver, a limitation that claim 11 of '917 does not specifically recite. However, claim 11 of '917 is already directed to controlling the transceiver in response to changes and deviations in the operating conditions of the transceiver, and it would be well understood in the art that the system recited in claim 11 of '917 may experience abnormal conditions (i.e., deviations from configured operating conditions). Given the apparatus described by claim 11 of '917, it would have been obvious to a person of ordinary skill in the art to further allow the adjustment value to correspond to deviations from the configured operating conditions as recited in claim 9 of the application in

order to allow the system to recover from abnormal situations. Therefore, claim 9 is rejected under obvious-type double patenting over claim 11 of '917.

12. Claims 10 and 11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 09/777,917 in view of King et al.

Claims 10 and 11 of the application depend on claim 8; claim 8 is rejected under obvious-type double patenting over claim 11 of '917 as already discussed above.

Regarding claim 10, claim 10 of the application further recites that the control circuitry is configured to adjust control signals by scaling them, a limitation that claim 11 of '917 does not specifically recite. However, King et al. teach a system related to the system already recited in claim 11 of '917 including providing control signals in response to operation conditions of a transceiver and further teach scaling control signals using polynomial coefficients (column 13, lines 60-64).

It would have been obvious to a person of ordinary skill in the art to scale the control signals as taught by King et al. (in the system suggested by claim 11 of '917) so that the control signals can be optimized even in response to slight changes in the operating conditions of the system in a way that requires less memory storage (column 14, lines 34-42). Therefore, claim 10 is rejected under obvious-type double patenting over claim 11 of '917 in view of King et al.

Regarding claim 11, claim 11 of the application further recites that the control circuitry is configured to adjust control signals by an amount specified by the adjustment value, a limitation that claim 11 of '917 does not specifically recite. However,

Art Unit: 2633

King et al. teach a system related to the system already recited in claim 11 of '917 including providing control signals in response to operation conditions of a transceiver and further teach adjusting control signals by a particular amount specified by an adjustment value (the adjustment value taught by King et al. is a value stored in a discrete table; column 13, lines 60-64).

It would have been obvious to a person of ordinary skill in the art to adjust the control signals by a specified adjustment value as taught by King et al. (in the system suggested by claim 11 of '917) so that the control signals can be adjusted quickly and in a way that requires less processing than calculating the control signals in real-time (column 14, lines 34-42). Therefore, claim 11 is rejected under obvious-type double patenting over claim 11 of '917 in view of King et al.

13. Claim 12 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 36 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 12 of the application (as well as it may be understood with respect to 35 U.S.C. 112 discussed above) recites a method with steps similar to the steps recited in claim 36 of '917 (which depends on claim 26 of that application), including enabling a host device to read from and write to locations, receiving analog signals from a transceiver, converting the input signals to digital values, storing the digital values, generating control signals, and adjusting a control signal in accordance with an adjustment value in a memory.

Claim 12 of the application differs from claim 36 of '917 in that the claim lacks a comparison step as recited in claim 36 of '917. However, given the apparatus recited in claim 36

of '917, it would have been obvious to a person of ordinary skill in the art to provide the method recited in claim 12 of the application by leaving out the comparison step.

Claim 12 of the application further differs from claim 36 of '917 in that it recites a deviation from a configured operation condition of the transceiver. However, claim 36 of '917 is already directed to controlling the transceiver in response to changes and deviations in the operating conditions of the transceiver, and it would be well understood in the art that the device recited in claim 36 of '917 may experience abnormal conditions (i.e., deviations from configured operating conditions). Given the method already recited by claim 36 of '917, it would have been obvious to a person of ordinary skill in the art to further recite deviations from the configured operating conditions as recited in claim 12 of the application in order to allow the system to recover from abnormal situations. Therefore, claim 12 is rejected under obvious-type double patenting over claim 36 of '917.

14. Claim 13 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 36 of copending Application No. 09/777,917 in view of King et al.

Regarding claim 13, claim 13 of the application (which depends on claim 12) further recites that scaling the control signals, a limitation that claim 36 of '917 does not specifically recite. However, King et al. teach a system related to the system already recited in claim 36 of '917 including providing control signals in response to operation conditions of a transceiver and further teach scaling control signals using polynomial coefficients (column 13, lines 60-64). It would have been obvious to a person of ordinary skill in the art to scale the control signals as taught by King et al. (in the method suggested by claim 36 of '917) so that the control signals

Art Unit: 2633

can be optimized even in response to slight changes in the operating conditions of the system in a way that requires less memory storage (column 14, lines 34-42). Therefore, claim 13 is rejected under obvious-type double patenting over claim 36 of '917 in view of King et al.

15. Claims 1, 4, and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/713,685 in view of Swartz and King et al.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 4 of the application each generally recite elements as similarly recited in claim 1 of '685, including a transmitter, a receiver, and a controlling circuit including memory, analog to digital conversion circuitry, a host interface, and comparison logic for comparing input values to limit values and generating a flag values.

Claims 1 and 4 of the application differ from claim 1 of '685 in that the claims of the application further recite that the circuit is a single-chip integrated circuit. However, it is well known in the art that a circuit containing components such as memory or analog to digital conversion circuitry may be integrated onto a single chip, as Swartz in particular teaches (column 11, lines 3-22). It would have been obvious to a person of ordinary skill in the art to integrate the controller components recited in claim 1 of '685 onto a single chip as taught by Swartz in order to manufacture the controlling circuit efficiently and compactly.

Claims 1 and 4 of the application also differ from claim 1 of '685 in that the claims of the application further recite that the interface is also configured to enable a host to write to the memory, and the circuit further includes operation disable circuitry. However, King et al. teach a similar circuit for controlling an optical communication device including a host interface (serial

Art Unit: 2633

port 26) and further teach that the interface enables a host to read and write to the memory in the circuit (column 13, lines 44-49). Given the apparatus recited in claim 1 of '685, it would have been obvious to a person of ordinary skill in the art to allow the host to write to memory as taught by King et al. in order to allow the host to interrogate the circuit or load initial calibration data for control of the optical device (as particularly suggested by King et al.; column 13, lines 44-49). King et al. further teach operation disable circuitry configured to disable the device in response to a flag (column 16, lines 24-38, particularly lines 36-38). Given the apparatus recited in claim 1 of '685, it would have been obvious to a person of ordinary skill in the art to further include operation disable circuitry as suggested by King et al. in the system suggested by claim 1 of '685 in view of Swartz in order to shut down the device for safety when the circuit detected that conditions had exceeded thresholds for the operation of the device. Claims 1 and 4 of the application are therefore rejected under obvious-type double patenting over claim 1 of '685 in view of Swartz and King et al.

Claim 7 of the application, which depends on claim 4, further recites a temperature look up table, which claim 1 of '685 lacks. However, King et al. further teach a temperature look up table used in generating control signals (column 13, lines 60-67; column 14, lines 1-10). It would have been obvious to a person of ordinary skill in the art to further include a temperature look-up table as taught by King et al. to the system suggested by claim 1 of '685 in order to allow the system to respond to changes caused by the temperature of the optical device. Claim 7 of the application is therefore rejected under obvious-type double patenting over claim 1 of '685 in view of Swartz and King et al.

16. Claims 2 and 5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/713,685 in view of Swartz, King et al., and Stephenson.

Claims 2 and 5 of the application, which depend on claims 1 and 4 respectively, further recite that the disable circuitry disables the transceiver in response to a signal sent to a disable pin in the transceiver, a limitation which the apparatus described by claim 1 of '685 in view of Swartz and King et al. lacks. However, Stephenson teaches a disable pin 115 in an optical transceiver (Figure 4).

As discussed above with regard to claims 1 and 4, the apparatus suggested by claim 1 of '685 in view of Swartz and King et al. already includes operation disable circuitry. It would have been obvious to a person of ordinary skill in the art to further include a disable pin as taught by Stephenson in the system suggested by claim 1 of '685 in view of King et al. in order to provide a way to clearly cut off the transceiver and prevent the various feedback loops in the system from activating or controlling the transceiver in response to the loss of output (Stephenson, page 6, paragraph [0045]). Therefore, claims 2 and 5 of the application are rejected under obvious-type double patenting over claim 1 of '685 in view of King et al. and Stephenson.

17. Claims 3 and 6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 9 of copending Application No. 10/713,685 in view of Swartz and King et al.

Claims 3 and 6 of the application, which depend on claims 1 and 4 respectively, further recite that the limit value is based on a temperature of the transceiver, a limitation that is similarly included in the limitations recited in claim 9 of '685, which depends indirectly on claim

Art Unit: 2633

1 of that application. Claims 3 and 6 of the application are therefore rejected under obvious-type double patenting over claim 9 of '685 in view of Swartz and King et al. for the reasons given above for the parent claims.

18. Claims 8 and 9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 10/713,685 in view of Swartz..

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 8 of the application generally recites elements as similarly recited in claim 11 of '685 (which depends on claim 1 of that application), including a transmitter, a receiver, and a controlling circuit including memory, analog to digital conversion circuitry, control circuitry for generating control signals, a host interface, and circuitry configured to adjust a control signal in accordance with an adjustment value stored in the memory.

Claim 8 of the application differ from claim 11 of '685 in that claim 8 further recites that the circuit is a single-chip integrated circuit. However, it is well known in the art that a circuit containing components such as memory or analog to digital conversion circuitry may be integrated onto a single chip, as Swartz in particular teaches (column 11, lines 3-22). It would have been obvious to a person of ordinary skill in the art to integrate the controller components recited in claim 11 of '685 onto a single chip as taught by Swartz in order to manufacture the controlling circuit efficiently and compactly.

Claim 8 also lacks comparison logic as recited in claim 11 of '685. However, given the apparatus recited in claim 11 of '685, it would have been obvious to a person of ordinary skill in the art to provide the apparatus recited in claim 8 of the application by leaving out the

Art Unit: 2633

comparison logic. Therefore, claim 8 is rejected under obvious-type double patenting over claim 11 of '685 in view of Swartz.

Claim 9 of the application, which depends on claim 8, further recites that the adjustment value corresponds to a deviation from a configured operation condition of the transceiver, a limitation that claim 11 of '685 does not specifically recite. However, claim 11 of '685 is already directed to controlling the transceiver in response to changes and deviations in the operating conditions of the transceiver, and it would be well understood in the art that the system recited in claim 11 of '685 may experience abnormal conditions (i.e., deviations from configured operating conditions). Given the apparatus described by claim 11 of '685 in view of Swartz (as discussed above with regard to claim 8 of the application), it would have been obvious to a person of ordinary skill in the art to further allow the adjustment value to correspond to deviations from the configured operating conditions as recited in claim 9 of the application in order to allow the system to recover from abnormal situations. Therefore, claim 9 is rejected under obvious-type double patenting over claim 11 of '685 in view of Swartz.

19. Claims 10 and 11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 10/713,685 in view of Swartz and King et al.

Claims 10 and 11 of the application depend on claim 8; claim 8 is rejected under obvious-type double patenting over claim 11 of '685 as already discussed above.

Regarding claim 10, claim 10 of the application further recites that the control circuitry is configured to adjust control signals by scaling them, a limitation that claim 11 of '685 in view of Swartz does not specifically recite. However, King et al. teach a system related to the system

Art Unit: 2633

already recited in claim 11 of '685 including providing control signals in response to operation conditions of a transceiver and further teach scaling control signals using polynomial coefficients (column 13, lines 60-64).

It would have been obvious to a person of ordinary skill in the art to scale the control signals as taught by King et al. (in the system suggested by claim 11 of '685 in view of Swartz) so that the control signals can be optimized even in response to slight changes in the operating conditions of the system in a way that requires less memory storage (column 14, lines 34-42). Therefore, claim 10 is rejected under obvious-type double patenting over claim 11 of '685 in view of Swartz and King et al.

Regarding claim 11, claim 11 of the application further recites that the control circuitry is configured to adjust control signals by an amount specified by the adjustment value, a limitation that claim 11 of '685 in view of Swartz does not specifically recite. However, King et al. teach a system related to the system already recited in claim 11 of '685 including providing control signals in response to operation conditions of a transceiver and further teach adjusting control signals by a particular amount specified by an adjustment value (the adjustment value taught by King et al. is a value stored in a discrete table; column 13, lines 60-64).

It would have been obvious to a person of ordinary skill in the art to adjust the control signals by a specified adjustment value as taught by King et al. (in the system suggested by claim 11 of '685 in view of Swartz) so that the control signals can be adjusted quickly and in a way that requires less processing than calculating the control signals in real-time (column 14, lines 34-42). Therefore, claim 11 is rejected under obvious-type double patenting over claim 11 of '685 in view of Swartz and King et al.

20. Claim 12 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 10/713,685.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 12 of the application (as well as it may be understood with respect to 35 U.S.C. 112 discussed above) similarly recites a method with steps corresponding to the elements recited in claim 11 of '685, including receiving analog signals from a transceiver, converting the input signals to digital values, storing the digital values, enabling a host device to read from and write to locations, generating control signals, and adjusting a control signal in accordance with an adjustment value in a memory.

Claim 12 of the application differs from claim 11 of '685 in that the claim lacks comparison logic as recited in claim 11 of '685. However, again as similarly discussed above with regard to claim 8 of the application, given the apparatus recited in claim 11 of '685, it would have been obvious to a person of ordinary skill in the art to provide the method recited in claim 12 of the application by leaving out the comparison logic.

Claim 12 of the application further differs from claim 11 of '685 in that it recites a deviation from a configured operation condition of the transceiver. However, as similarly discussed above with regard to claim 9 of the application, claim 11 of '685 is already directed to controlling the transceiver in response to changes and deviations in the operating conditions of the transceiver, and it would be well understood in the art that the system recited in claim 11 of '685 may experience abnormal conditions (i.e., deviations from configured operating conditions). Given the apparatus already recited by claim 11 of '685, it would have been obvious

Art Unit: 2633

to a person of ordinary skill in the art to further recite deviations from the configured operating conditions as recited in claim 12 of the application in order to allow the system to recover from abnormal situations. Therefore, claim 12 is rejected under obvious-type double patenting over claim 11 of '685.

21. Claim 13 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 10/713,685 in view of King et al.

Regarding claim 13, claim 13 of the application, which depends on claim 12, further recites scaling the control signals, a limitation that claim 11 of '685 does not specifically recite. However, King et al. teach a method related to the method already suggested by claim 11 of '685 including providing control signals in response to operation conditions of a transceiver and further teach scaling control signals using polynomial coefficients (column 13, lines 60-64).

It would have been obvious to a person of ordinary skill in the art to scale the control signals as taught by King et al. (in the method suggested by claim 11 of '685) so that the control signals can be optimized even in response to slight changes in the operating conditions of the system in a way that requires less memory storage (column 14, lines 34-42). Therefore, claim 13 is rejected under obvious-type double patenting over claim 11 of '685 in view of King et al.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

Art Unit: 2633

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
Christina Y Leung
Patent Examiner
Art Unit 2633